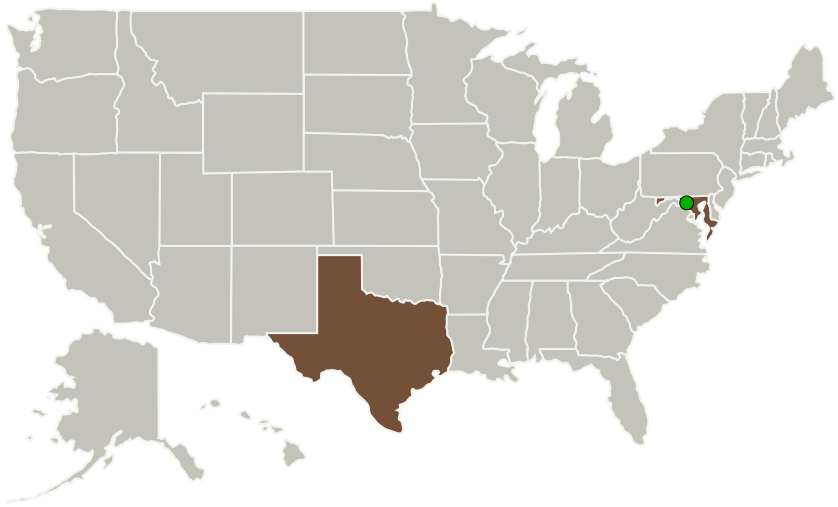
# Improved Hyperspectral Imaging Technologies, Phase I

Completed Technology Project (2014 - 2014)

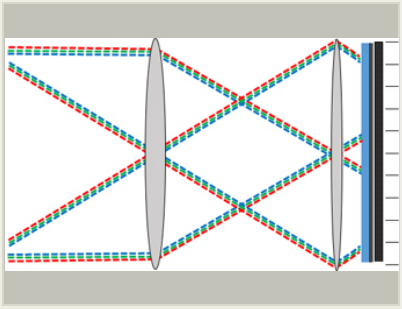
## Project Introduction

Improved hyperspectral imaging technologies could enable lower-cost analysis for planetary science including atmospheric studies, mineralogical investigations, and geological mapping. Traditionally, multispectral imaging (beyond RGB) requires numerous optical filters, complex spectroscopic instrumentation, or massive systems. A compact system that enables real-time hyperspectral imaging or long-term averaging without moving parts could revolutionize planetary observation techniques. Nanohmics, Inc. proposes to develop a novel on-chip hyperspectral imaging system for use in planetary missions. The hyperspectral system can be integrated with existing commercial-off-the-shelf imaging systems, providing an immediate route towards commercialization. The compactness will enable the technology to be applied in a variety of mission environments ranging from Flagship-class programs to cubesats.

## Primary U.S. Work Locations and Key Partners



| Organizations Performing Work | Role | Type | Location |
|---|---|---|---|
| Nanohmics, Inc. | Lead Organization | Industry | Austin, Texas |
| Goddard Space Flight Center(GSFC) | Supporting Organization | NASA Center | Greenbelt, Maryland |



Improved hyperspectral imaging technologies Project Image

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| Primary U.S. Work Locations | |
|---|---|
| Maryland | Texas |

## Project Transitions

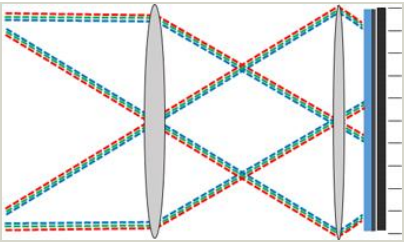
**June 2014:** Project Start

**December 2014:** Closed out

**Closeout Documentation:**

- Final Summary Chart*(https://techport.nasa.gov/file/137441)*

## Images



**Project Image**
Improved hyperspectral imaging technologies Project Image *(https://techport.nasa.gov/image/134391)*

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Organization:**

Nanohmics, Inc.

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

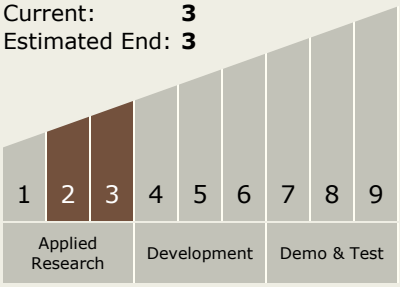
Carlos Torrez

**Principal Investigator:**

Byron Zollars

## Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



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## Technology Areas

**Primary:**

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes

## Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System